

REMARKS

Claims 1 – 4, 11, 12, 14, and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's Admission of Prior Art) and Sorin (U.S. Patent No. 5,365,335) in view of Hasegawa et al. (U.S. Patent No. 4,553,264, hereinafter Hasegawa) and Evans et al. (U.S. Patent No. 4,048,573, hereinafter Evans).

Applicants assert that claims 1 – 4, 11, 12, 14, and 15 are not rendered obvious from AAPA and Sorin in view of Hasegawa and Evans because a *prima facie* case of obviousness has not been established. Applicants assert that a *prima facie* case of obviousness has not been established because the Examiner has not presented some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. In addition, with regard to claims 4 and 12, Applicants assert that even if the prior art references were combined, the combined references fail to teach or suggest all of the claim limitations.

I. Basis of Rejection for Obviousness

The Office action states that the AAPA and Sorin disclose "a device and method of monitoring an optical signal utilizing a heterodyne detection (fig. 3, ref. 200) comprising steps of providing an input signal (fig. 3, ref. 214), a local oscillator signal (fig. 3, ref. 220), combining them (fig. 3, ref. 216), detecting the combined signal (fig. 3, ref. 12) of heterodyne, intensity and shot noise, and generating an output signal that is indicative of an optical parameter of input signal and includes monitoring a heterodyne signal." The Office action goes on to state that the "AAPA and Sorin fail to disclose an attenuator positioned before heterodyne signal combination" (Office action, April 23, 2003, page 4, item 3) but that "Hasegawa discloses a heterodyne tuner with an attenuator positioned immediately after the input (fig. 8, ref. 62)" and that "Evans discloses amplification improvements that include attenuation at the input (fig. 1; abstract)." The Office action concludes that it would have been obvious "to have positioned the attenuator of Sorin immediately after the input port and before the

signal combination as suggested by Hasegawa since the noise intensity from the input signal is usually a dominant noise source (fig. 8, ref. 62)." (Office action page 4, item 3) From this statement, Applicants assume that the Examiner is suggesting that it would have been obvious to change the position of the attenuator (240), as disclosed in Fig. 3 of Sorin, from fiber (223) to fiber (213) such that the attenuator is located between the light source (214) and the coupler (216).

II. Applicants' Arguments Against Obviousness

Claim 1

Claim 1 recites a method for monitoring an optical signal utilizing optical heterodyne detection. The claim recites:

"providing an input signal;
providing a local oscillator signal;
attenuating said input signal;
combining said attenuated input signal with said local oscillator
signal to create a combined optical signal;
detecting said combined optical signal; and
generating an output signal that is indicative of an optical
parameter of said input signal"

Applicants assert that the Office action does not identify a suggestion or motivation either in the AAPA, Sorin, Hasewaga, Evans or in the knowledge generally available to one of ordinary skill in the art, to combine Hasewaga and Evans with the AAPA and Sorin. With regard to Hasewaga, the Office action simply points out the existence of the attenuator in Hasewaga and then concludes that it would have been obvious to combine Hasewaga with the AAPA and Sorin. The only support provided for the conclusion is the phrase "since the noise intensity from the input signal is usually the dominant noise source (fig. 8, ref. 62)." Applicants are not sure what is meant by the phrase "since the noise intensity from the input signal is usually a dominant noise source." Further, Applicants assert that identifying intensity noise that is contributed from an input signal as a dominant noise source in an optical heterodyne detection system does not provide the requisite suggestion or motivation to combine Hasewaga with the AAPA and Sorin or the use of attenuation on an input signal as recited in claim 1. It is well settled in the law that the mere fact that references can be combined does

not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. [M.P.E.P. 2143.01] Applicants assert that the general statement "since the noise intensity from the input signal is usually a dominant noise source" does not suggest the combination of the AAPA, Sorin, and Hasegawa without some objective reasons.

With regard to Evans, the Office action states that "Evans discloses amplification improvements that include attenuation at the input (fig. 1, Abstract)." The Office action goes on to state that "[a]ttenuators are well known in the art and are widely used to reduce noise levels, maximizing signal to noise ratio in several optical systems (Evans, abstract)." Applicants assert that the mere statement that "[a]ttenuators are well known in the art and are widely used to reduce noise levels, maximizing signal to noise ratio in several optical systems (Evans, abstract)" does not provide the requisite suggestion or motivation to combine Evans with the AAPA and Sorin or to use attenuation as recited in claim 1. As disclosed in Sorin, attenuation can be used at different locations within an optical system to improve signal to noise ratio. The location and use of attenuation within an optical system may differ depending on the specifics of the system. It is well settled in the law that the mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. [M.P.E.P. 2143.01] Applicants assert that the general statement that attenuators are "well known in the art and are widely used to reduce noise levels" does not suggest the combination of the AAPA, Sorin, and Evans without some objective reasons.

With the rejection of Claim 1, the Office action has failed to provide the requisite factual basis and failed to establish the requisite motivation to support the conclusion that it would have been obvious to one skilled in the art to combine Hasewaga and Evans with the AAPA and Sorin. The Examiner is requested to cite art supporting his assertions. Alternatively, if the Examiner is aware of facts within his personal knowledge that provide the requisite factual basis and establishes the requisite motivation to support his conclusion that it would have been obvious to one skilled in the art to combine Hasewaga and Evans with the AAPA and Sorin, the Examiner is requested to provide an affidavit in accordance with 37 C.F.R. 1.104(d)(2).

There is no suggestion or motivation in Sorin to re-locate the attenuator

See the remarks found at page 8 of the Appeal Brief filed on February 18, 2003.

The proposed modification to Sorin would render the teachings of Sorin unsatisfactory for their intended purpose

See the remarks that start at page 8 of the Appeal Brief filed on February 18, 2003. The Office action also states that "[a]lthough placing the attenuator after the coupler also exhibits functional equivalency, placing it immediately following the input signal, however, which likewise serves the same purpose, also has well known benefits." The Examiner is requested to cite art supporting his assertions. Alternatively, if the Examiner is aware of facts within his personal knowledge that provide the requisite factual basis and establishes the requisite motivation to support his conclusion, the Examiner is requested to provide an affidavit in accordance with 37 C.F.R. 1.104(d)(2).

Sorin does not teach or suggest adjusting the level of attenuation in response to feedback from an output signal

See the remarks that start on page 10 of the Appeal Brief filed on February 18, 2003.

Independent Claims 11 and 14

Applicants assert that the remarks provided above apply also to independent claims 11 and 14.

Dependent Claims 2 – 10, 12, 13, and 15 – 20

Claims 2 – 10 are dependent on independent claim 1, claims 12 and 13 are dependent on independent claim 11, and claims 15 – 20 are dependent on independent claim 14. Applicants assert that these claims are allowable based on allowable base claims.

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Allowable Subject Matter

Applicants note with appreciation that claims 5 – 10, 13, and 16 – 20 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicants have not rewritten the claims, as suggested, in view of the above-provided remarks.

Common Ownership of Claimed Inventions

Applicants confirm Examiner's assumption that the subject matter of the various claims was commonly owned at the time the inventions covered in the claims were made.

Conclusion

For the above-identified reasons, Applicants assert that a *prima facie* case of obviousness has not been made and therefore claims 1, 11, and 14 are not rendered obvious from the AAPA and Sorin in view of Hasegawa and Evans.

Applicants respectfully request reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

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Respectfully submitted,



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